Hypnosis and Suggestion

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Abstract

Hypnosis is shown to be one of many ways a general capacity for phenomenological control shows itself. Phenomenological control is an evolved capacity to deceive ourselves so as to support socially useful beliefs. It allows one to strategically construct subjective experiences that misrepresent reality despite contradictory evidence in order to meet goals. It is so good at its evolved function that researchers of it have often found themselves being deceived: The participants in their studies feel energies, special states or parts of themselves that are taken to be constitutive of the mechanism of construction rather than what the mechanism constructs.

Key points:

- Hypnosis is just one context in which phenomenological control is used; others include spirit possession, many spiritual experiences, esoteric martial arts, everyday experiences and psychology experiments
- Phenomenological control is a metacognitive trick one plays on oneself: No other abilities are gained nor lost
- For example, hypnosis does not improve memory, strength, nor attentional capacity
- It can nevertheless be clinically useful in, for example, making pain go away by itself, precisely because it involves the motivated transformation of subjective experience
- No special state is needed to explain how or when phenomenological control is used
- There are enduring individual differences in the capacity for phenomenological control that have yet to be explained

Keywords: Hypnosis, suggestion, phenomenological control, subjective experience, metacognition, cold control

Introduction: Contemporary Hypnosis and its History

Hypnosis, as observed on stage, film, in fiction, at parties, in the therapy room, in surgery, and in the laboratory, typically involves a hypnotist, and a person willing to participate in the hypnosis, typically called the subject, but might be better called the participant to highlight the active collaborative role they play. The hypnotist communicates hypnotic suggestions to the participant and, if they are capable and willing, the participant modifies their perceived reality to incorporate the suggestions. Eventually, the session ends and typically all of the suggestions are cancelled. Those remaining are referred to as "post-hypnotic suggestions", and can last a varying amount of time from hours to months or even years.

Examples of hypnotic suggestions are: (during research) to notice a hand rising by itself, to taste something sweet in their mouth, to forget things they would otherwise remember; (in therapy) to stop a habit, or to start a desired habit, to react differently to difficult situations, to relax; (on stage) to see people who aren't real, to speak a "Martian" language, to become instantly drunk, and then instantly sober. They may be phrased in a combination of direct, authoritative terms ("Your hand will rise up all by itself") or indirect, permissive terms ("I'm not sure if you'll notice the exact point in time at which your hand will begin to lift, or if you'll know which part of your hand will begin to lift first").

Typically, the effects of suggestions are felt to be happening involuntarily; indeed, it is the involuntary feeling that makes a suggested action peculiar and interesting and not just a normal action. That is, the arm rises or the hallucination presents itself in response to the suggestion, but the participant does not feel that they are the source of these effects. Instead, the words of the hypnotist (or, at least, the perceived intent of the hypnotist) are assumed as the cause. The established, shared experience is one in which the hypnotist commands or leads the participant, and the participant (at least, sometimes) incorporates the suggested ideas and concepts into their version of reality.

Often, hypnotists will use an induction near the beginning of a session. Hypnotic inductions vary a lot in terms of form, format, length, wording and style. Their only commonality is that they consist of defining the situation as hypnotic, with suggestions (some of them unspoken) of being in a state that enables further response. Many behaviours and experiences can be implied by an induction: the direct suggestion "Sleep!" on stage, for example, prompts participants to experience what others have previously appeared to experience in response to it. As well as slumping and appearing to be asleep (eyes closed, quiet, unresponsive to anyone other than the hypnotist), participants may also assume an induction implies entering a hypnotic trance, a state in which they will respond positively to all of the hypnotist's subsequent suggestions; they may also assume the induction implies inward turning of attention except for that focused on the hypnotist, or amnesia for the period they are hypnotised, or relaxation and calmness. Participants may further assume that the state of hypnosis induced involves different characteristics according to context, which includes cultural beliefs. In the 1800s and into the 1900s, trance often involved spontaneous amnesia and analgesia (as markers of a special physiological state). As the strength of belief that mere trance induction implied amnesia and analgesia waned, they ceased to occur spontaneously and typically needed to be directly suggested.

It has been known since the mid-nineteenth century that suggestions can be responded to in absence of a hypnotic induction or a hypnotic trance. in fact, the conclusion from more than a century of research since then that induction makes a difference to response to suggestion, albeit a small one. Barber (1969) demonstrated, as long as fifty years ago, that this difference can be eliminated if instructions are first given that encourage positive attitudes and motivation.

A particular historical strand comes down to us in the current day where the capacity to respond to suggestion took on the peculiar rituals and characteristics of modern-day hypnosis (Lynn & Kirsch, 2006). That history started with spirit possession. Spirit possession cases were on the increase in Europe from the Renaissance onwards. These could often be cured by exorcisms in which the patient went into convulsions when the spirit was called forth by the priest; the priest could even

command the spirit to produce convulsions in various parts of the patient's body, to show the priest's control over the spirit, before the spirit left for good.

Franz Anton Mesmer (1734-1815), a physician from Vienna, became interested in the healing power of magnets (serious scientific work on the nature of magnets having started in the previous century). His first patient suffered from convulsions. When Mesmer passed magnetics over her, she convulsed. In fact, he could make particular body parts convulse by pointing to them, after which she would go into remission. We do not know why she convulsed, but Lynn and Kirsch speculate she was aware of the contemporary exorcisms and these served as a model for her belief of the appropriate way to respond. Mesmer came to believe, by experimenting with different procedures, that he could influence the flow of a magnetic fluid within the body using metal batons, other props, and passes and touches of his hands. Clients of Mesmer, having heard of his first case, and then later cases, largely responded to his ritualistic motions with involuntary convulsions, not because they were directly verbally suggested, but simply because that was understood as the appropriate thing to do.

Mesmerism was largely discredited by two French royal commissions in the late eighteenth century. The Franklin commission, in one of the first controlled psychological experiments, concluded that the effects were due to imagination: trees or glasses of water believed to be "magnetized" caused convulsions whereas those that had been secretly "magnetized" did not. This series of experiments is an important landmark in the history of experimental design in psychology and medicine. It also established one of the most important discoveries in the history of psychology: The ability of people to deceive themselves by constructing subjectively compelling experiences to fit the needs of the situation. The full nature of this ability was not clearly seen however – the emphasis of the commission was on dismissing animal magnetism as imagination.

While the magnetic theory explaining mesmerism was put in doubt, the subjective compelling nature of responses to mesmeric passes convinced some that the practice needed to be revised not abandoned. When one of Mesmer's pupils, Amand-Marie-Jacques de Chastenet, Marquis of Puységur, mesmerised a farm hand *who did not know that convulsions were expected* (because he

was not part of high society) he instead went silent and became unresponsive to anyone other than the Marquis. De Puységur subsequently named this phenomenon, “somnambulism”. De Puységur believed the effect was psychological; others continued to believe in a magnetic fluid.

After Mesmer’s death in 1814, a form of “neomesmerism” arose, mostly as a spectacle to observe, but also as a form of therapy. Rather than convulsions, it was now understood that participants would enter somnambulism, which resembled a sleep-like state. Taking place in seances, neomesmerists would shock, surprise and entertain small audiences by causing their mesmerised participants to demonstrate outlandish feats, such as speaking languages they could not know or locating objects that had been securely hidden. While the majority of these feats were the result of clandestine conjuring, they were often mixed with real suggested phenomena, such as analgesia, anaesthesia, and amnesia. Mesmerism also thrived as a therapy. Because magnetizer and client often believed there was a fluid, a cosmic force, that could be controlled by the magnetizer, the client could feel the transmission of magnetic energy and this could be therapeutic in itself. The belief that the magnetic state involved contact with a great power provided the basis for the client in the magnetic state diagnosing their own illness and prescribing their treatment, or prophesying when they would get better. The magnetized client was rendered passive but also empowered to solve their own problems. Indeed, mesmerism was one of the few therapies that helped people in a time when medical practices, such as ample bloodletting and ready prescription of mercury, were actively harmful.

John Elliotson, one of the founders of University College Hospital in London, was a firm advocate of putting patients in a magnetic state to cure them. He spoke about his theories in front of the patients as if they were mere subjects of investigation rather than participants. When he conjectured the magnetic force would be reflected off mirrors, or conducted through some substances and not others, the patients’ behaviour duly complied to the astonishment of high society in London. When he wondered if magnetism could cause “transposition of the senses”,

enabling say a finger to see, the implicitly suggested synaesthesia duly happened, the patient having visual experiences produced by their probing finger!

When demonstrations of mesmerism came to the attention of surgeon James Braid in 1841, he decided to document the processes and phenomena under his new term, “hypnotism”, from the Greek word for sleep. He proposed that hypnosis and suggestion relied at least partly on the mind focusing on a single idea, a theory called “monoideism”, and that a trance could be induced by staring at a single object, such as a candle flame, to produce neural fatigue. He later became aware that a trance (i.e. putative sleep-like state caused by the fatigue) was unnecessary for suggestions to be responded to successfully.

In the 1800s, physiological theories of fatigue competed with ideas more akin to Mesmer’s. Around the 1850s, George Stone, impressed by the recent findings that nervous tissue operated via electricity, believed he could make himself positive and another person negative and thereby electrically control them or heal them. If his will controlled the electricity of another, then his will also controlled the movements of another. Stone put on shows demonstrating the power of electro-biology, shows that closely set the model for stage hypnosis. He did not refer to hypnosis nor use an induction; rather, he showed that a person in a perfectly wakeful state could not rise up nor sit down except upon the will of the “operator”; they could be made to forget their own name; to taste water as brandy and become drunk, to see a non-existent snake, and so on. Gradually, such performances took on board the paraphernalia of hypnosis, using an induction to induce a sleep like state called hypnosis.

Braid himself was a therapist and not an entertainer, effectively inventing systematic desensitization a hundred years before it became part of behaviour therapy in the 20th century, by inducing nervous sleep (or arousal) to counteract a symptom (Robertson, 2013). Braid also believed that negative beliefs could become self-fulfilling prophecies, which he therefore tried to substitute with positive ideas of vigour and self-confidence: A precursor of cognitive therapy.

Towards the end of the nineteenth century, the most significant hypnosis research was being conducted at two schools in France: the Nancy School led by Liébeault and Bernheim, which focused on suggestibility as a trait that varied continuously in healthy people; and the Salpêtriére School led by Charcot and Janet, where hysteria, what we would now call dissociative disorder, was seen as equivalent to a hypnotic response. These key insights of both schools inform modern research. Still, there was the ever-present tendency to attribute suggested phenomena to the essence of hypnosis: Charcot believed there were three definite stages to entering hypnosis – but only patients who knew of these stages demonstrated them!

By the late 1800s hypnosis was investigated in terms of how suggestions could create compelling subjective experiences, sometimes taken as reflections of reality because the suggestions were given by the procedure itself rather than conceived of as suggestions. For example, in 1894 de Rochas found he could, by capturing into wax the perceived emanations from a client's body, transfer feeling in the body to a wax doll such that when the wax doll's arm was pinched the person felt it, but their own arm was numb. This could be called the suggested "wax hand illusion". He could also by indirect suggestion create other embodiment illusions, such as out of body experiences. He interpreted these findings supernaturally as showing the exteriorization of a subtle body. He also found he could, by suggestion, return people to successively earlier past lives.

To summarise, as people's beliefs changed from thinking in terms of spirit possession, to animal magnetism causing convulsions, to a sleep-like state induced by gazing – changes in beliefs triggered largely by a series of historical accidents (e.g. scientific interest in magnets or the brain being electrical; a peasant falling still and silent because he knew not what else to do) – by 1900, the ability of people to construct subjectively compelling experiences manifested itself in a particular way that we now recognize as the hypnotic context. One person, the hypnotist, controls another, the subject, by the hypnotist inducing a sleep-like state of hypnosis brought about by intense gazing. In fact, this particular scenario is just a Victorian ritual: The hypnotist is not needed, no gazing nor induction is needed, and whatever state is induced is not sleep-like, and furthermore not needed.

Consider the contrasting features of other cases where the mind constructs subjectively compelling experiences to deceive itself about reality in order to satisfy situational requirements. The particular historical strand of events leading to hypnosis started with spiritual possession. These experiences still occur regularly around the world and often have a long tradition meeting social requirements peculiar to their cultural context. For example, especially since the 17th century and right up to the present day, when the Tibetan government (and now the government in exile in Dharamsala) had important matters of state they could not decide, they would consult the Nechung Oracle, a designated monk who would be taken over by the protector spirit, Pehar Gyalpo. The monk would dress in heavy ceremonial gear, and dance while considering the question posed. No sleep like state would be involved, but the monk would feel Pehar Gyalpo take over and would feel the words coming out of his mouth, not by his own will but by that of Pehar Gyalpo's. After delivering his answer, the monk would collapse. No hypnotist suggests the experience; the monk understands what is to be experienced and constructs it for himself, behaving and feeling in a way appropriate to that context.

Or consider esoteric martial arts, where ki or qi energy can be projected from the body or sucked from another person into one's body. In the context of vigorous martial art practice, the master may suck the ki from a student's body, paralyzing an arm or even the whole body, stopping the student breathing; or ki can be projected from a distance, knocking students over and even knocking them out. No induction is needed; and the particular behaviours displayed are appropriate to that cultural context, thereby differing in detail from what is expected in the hypnotic context. In the martial art's context, a forward flip may be appropriate as one is knocked by the ki energy; in hypnosis becoming sleepy may be required; for the Nechung oracle the appropriate behaviour is to issue a proclamation relevant to resolving detailed and difficult problems of state governance. It has been recognised for over a century that a theory of hypnosis must account for responses to suggestions that did not follow a hypnotic induction or suggestions for trance. If we focus on the responses, and therefore on the phenomenological changes in perceived reality, then it becomes

clear that a theory of hypnosis should be broad enough to accommodate all these manifestations of what appears to be the same process of the construction of experience.

In the twentieth century, Hull (1933) introduced statistics to the research of hypnosis and suggestion, allowing the subject to be explored through a modern, scientific lens. One key twentieth century development was the introduction of standard hypnotisability scales, where the same set of suggestions is used each time. The number of suggestions successfully passed is the objective score, and the average rating of how subjectively compelling each suggestion was, is the subjective score. These scores can be used to divide the group by level of response, into those with low levels, moderate levels and high levels. ”Highs” and “lows” are typically defined as the top and bottom 10% or 15%; but the precise cut-off is arbitrary as the distribution is more or less normal.

Some scales include their own specific induction, while others do not specify an induction and could be used with or without, depending on whether the measures were intended to be hypnotic (following an induction) or “waking” (not following an induction). Waking scores correlate well with hypnotic scores, and these scores also tend to be relatively stable over extended periods of time, varying by about one point on a ten-point scale, over 25 years.

A key development in hypnosis research, which was also a key development in thinking about methodology generally in psychology, is Orne’s (1959, 1969) notion of demand characteristics: the totality of the cues that inform a participant what is expected of them in a study or other situation. Orne was interested in the question of what was the essence of hypnosis and what was merely constructed by an understanding of what was required. Orne gave a lecture to his participants about hypnosis. To one half he demonstrated the false claim that a hypnotized subject will have unilateral catalepsy of the dominant arm: If put in any position by the hypnotist, the cataleptic arm stays there. When the participants were later hypnotized, no suggestion for catalepsy was given, but the group given the previous information about catalepsy showed the phenomenon whereas the other group did not. Thus, catalepsy is not part of the essence of hypnosis: It is produced by demand characteristics. Orne argued that behaviours produced by demand

characteristics in hypnosis may be genuinely experienced as subjectively compelling. But no special theory is needed to explain that behaviour: Apparently-spontaneous catalepsy is just another example of how people can construct compelling subjective experiences according to their needs (to be a good participant; to fulfil their expectations of how a good participant would behave).

Demand characteristics include cultural beliefs, background knowledge, information in the study itself and implicit or explicit cues from the hypnotist or experimenter. The demand characteristics would allow a participant to construct or even fake responses that were suggested by the demands of the situation in any psychological study (or indeed any social situation). Thus, understanding demand characteristics is of relevance to any psychological study. Psychologists have come to understand demand characteristics as a process by which a participant could guess the experimental hypothesis and fake responses to match; but this is a limited understanding of demand characteristics. In fact, demand characteristics allow some participants to construct compelling experiences (with all the neural and physiological processes that go along with having such experiences). We have already seen this at work in participants constructing spiritual possession experiences, convulsions or sleep-like states in response to the demands of the situation, in each case the powerful, constructed experiences being confused for the essence of the general process by which construction happens.

One useful paradigm when investigating the genuineness of hypnotic experiences is the real/simulator model, devised by Orne (1959). This permits experimenters to contrast the behaviour of participants pre-selected to have claimed compelling responses to suggestions (the highs, in this case the “reals”), to those who have been pre-selected because they claim not to respond to suggestions (the lows, in this case the “simulators”) who are instructed to fake being highs. Simulators are instructed by one experimenter to lie and pretend to be highly responsive to a second experimenter. The second experimenter does not know which participants are reals and which simulators, so they should administer the procedure identically to all. Kinnunen et al. (1994) used this paradigm with skin conductance response (SCR) to test the truthfulness of the statements made.

Results indicated that 89% of the reals met the bar for truthfulness, compared to 35% of the simulators; given the noise in classification of the SCRs, the precise percentages are not good estimates of how much truth telling was involved; rather, the conclusion is that reals are in general truth telling.

If the concern is that demand characteristics encourage participants to perform an assumed role simply for the benefit of an audience, then another useful experimental paradigm is to observe participants when they believe that they are not being observed. This surreptitious observation approach (Kirsch et al., 1989) was set up so that participants could be secretly observed when they were left alone. It revealed that reals, those apparently really responding to suggestions, continued to do so in absence of a known observer, whereas those who were simulating mostly failed to do so. The difference was stark and provides strong evidence that response to suggestion is not dependent on third party validation.

A further way to investigate the genuineness of suggested experiences is to look for expected differences in brain function. For example, recent studies have shown that suggested pain correlated significantly with fMRI observations of the pain matrix; suggestions for analgesia reduced P200 and N140 event-related potentials in highly responsive participants; and suggestions for adding and draining colour from pictures caused PET and fMRI images of brain activity to mirror the activity found when participants *observed* the corresponding colour-added/drained pictures (for evidence and discussion, see Dienes et al., 2022).

The weight of evidence suggests that responses to suggestions are, in the most part, genuinely experienced by the participants in the laboratory and that their reports of their experiences as feeling automatic and involuntary should be taken seriously.

The Characteristics of Hypnosis

Hypnosis is not “mind control”; there is no magical power that permits a hypnotist to control the mind of a participant. Instead, the hypnotist communicates suggestions to the participant, which the participant interprets, taking into account what they know about the hypnotist and context to

infer what was meant, before choosing how to respond. If the participant decides to respond positively, and has the mental abilities to achieve the inferred suggested effect, then the subsequent modification of their subjective reality is something that they themselves do entirely. The hypnotist might have provided the content, but the participant interpreted it, chose to enact it, and made it feel real to them. All hypnosis is, as they say, self-hypnosis.

It would be prudent to note, however, that the experience of engaging with suggestions (including those following a hypnotic induction) varies from a lucidity where the participant is fully aware of making a choice to engage with the suggestion, through to situations where the participant reports being entirely unaware of making any choices. These experiences, particularly given the discussion about genuine reporting above, should be taken seriously and explained by any theory that attempts to explain hypnosis and suggestion.

We can illustrate these points with a particular example. Post-hypnotic amnesia is the result of a suggestion to forget certain information or events after the hypnosis session has concluded. To casual observers and interviewers, it may appear that the participant has completely forgotten the information for which they have amnesia. It may appear that no matter who asks a question or how they ask it, the participant simply cannot recall the required information. Participants also report that the amnesia feels non-volitional.

This situation is, however, more nuanced than it at first appears. While continuing to insist that they cannot recall specific information, participants may automatically use the same information when solving problems or completing apparently unrelated tasks (unless the relevance of such unrelated tasks is pointed out and it has been suggested that they won't use the information on any such task). In addition, when sufficient pressure is applied, the majority of participants will recall the information that they have amnesia for (Coe, 1996). It appears, therefore, that post-hypnotic amnesia is tied closely to the conditions under which the participant deems it appropriate to show the amnesia. The experience of forgetting feels real to the participant, but it is an experience constructed by the participant, at least partially without them knowing. This is another example of

the difficulty in determining the genuineness of the suggested events. On the one hand, the information is clearly available to the participant, but on the other, the participant reports – quite convincingly, and consistently with other plausible reports – that they have no memory of the information.

Before we consider theories for how a participant might achieve this seemingly contradictory, subjectively compelling illusion, we should first consider the characteristics of hypnosis. The crux of the entire endeavour is the response to suggestion, with the hallmarks of the classic suggestion effect being the feelings of automaticity and involuntariness (Kihlstrom, 2008). Our ability to respond to suggestions can be described as our ability to modify our perceived reality to incorporate the suggested scenarios, as we have decided to interpret and implement them. This ability is called the capacity for *phenomenological control*. This term does not have the misleading implication of sleep being an important part of the process (remember "hypnosis" is the Greek word for sleep); it does not automatically imply there is a state (there may or may not be, but the English language word "hypnosis" necessarily describes a state, as in what happens when one is "hypnotized"); and it is not condescending to the people studied, it does not claim they are "suggestible" – rather it implies having an ability. Further, the term "phenomenological control" does not limit itself to a particular Victorian context, viz. the hypnotic context: That context can be seen as just one of many in which the same capacity shows itself, namely the capacity for people to deceive themselves by creating subjective experiences which support socially useful beliefs.

We will consider in turn a number of key questions concerning the characteristics of phenomenological control. First, does the induction produce a causally effective altered state? Second, when does phenomenological control show itself outside the hypnotic context? Third, what abilities are gained or lost when phenomenological control is used? And finally, why do some people have more phenomenological control than others?

What does the induction induce?

William James noted that almost any procedure can constitute a hypnotic induction: For example, making passes over the body, looking at a bright button, pressure on the forehead, or writing a letter ordering the recipient to sleep. Currently, academic research often uses a relatively standard induction that consists of about 10-15 minutes of the participant being told they are becoming more and more deeply hypnotized, often accompanied with instructions to imagine various things like walking down a set of steps.

Ghandi and Oakley (2005) elegantly determined if any components of the standard induction used in many labs enhanced hypnotic response. They compared three conditions in their response to suggestion: A control group with no induction; a group with the standard induction; and a group with the standard induction but with all uses of the term "hypnosis" substituted with "relaxation". Compared to the no induction condition, in this study the standard induction increased averaged subjective response by about 0.8 points (on 1 to 5 scale); however, the relaxation induction group was similar to no induction group. The most important aspect of the induction, therefore, is simply that it is called a hypnotic induction. Indeed, when different types of induction are compared, from relaxation to cycling on a bike, to taking a pill labelled "hypnosis", to the two-hypnotist "double induction", they all work to about the same extent. Essentially, if the procedure is plausible as a hypnotic induction (sometimes made plausible through information provided to the participant, such as in the case of riding a stationary bike), and is referred to as such, then it will likely work to the same extent as any other induction. Even if some procedures one has arbitrarily called an induction such as reading encyclopaedia entries or solving maths problems might not work as well, the range of procedures that can be used as an induction is clearly broad.

No special procedure may be needed to induce a hypnotic state, but that does not mean there is not a special hypnotic state. Maybe the person can enter that state whenever they realise it is appropriate. If the state is whatever subjective feelings the person believes a hypnotic state to be, then nothing further needs to be explained: It is just another example of people using

phenomenological control, in this case to create the feelings of being in a hypnotic state. But if the state is part of the essence of hypnosis, it must figure in a causal explanation of how suggestion works. This would not be demonstrated simply by, for example, comparing people after relaxation versus after a hypnotic induction, and showing that there are differences in fMRI. This simplistic reasoning has proved very tempting to researchers: “There is some difference in the brain between the relaxation and hypnosis conditions, therefore trance is real”. But the finding of any difference between conditions is consistent with people creating specific experiences in the induction versus relaxation conditions, because any difference in subjective experience corresponds to a brain difference of some sort. In a meta-analysis of such fMRI comparisons Landry et al (2017) conclude that the only area to reliably distinguish hypnotic from non-hypnotic conditions was a higher order visual area involved in mental imagery. And that is because inductions often ask people to imagine things, while relaxation instructions often do not. De Pascalis (2024) provides a recent review of the inconsistent findings in brain imaging attempting to characterize a hypnotic state.

One problem may be that brain imaging involves dealing with thousands of dependent variables with highly flexible analytic protocols under conditions of very low statistical power. In the future, when findings can be replicated after predictions and precise analyses have been thoroughly pre-registered, we will know what the facts are more clearly. And then what is needed are not any old brain difference that a story can be spun about post hoc, but brain differences that arise because they are predicted in advance by a theory that explains enhanced response to suggestion.

But there is a bigger problem. The only motivation for postulating trance or a hypnotic state in the first place is to explain enhanced response to suggestions brought about by an induction. The enhancement of response produced by an induction is small (Braffman & Kirsch, 1999, estimate it as merely 0.5 more suggestions passed out of 7). This small increase may arise because participants expect to respond more after an induction. Lush et al. (2021) developed the phenomenological control scale by removing all references to hypnosis, and the hypnotic induction, from a standard hypnotisability scale. The phenomenological control scale was framed as a test of imaginative skill.

Participants responded with more compelling subjective experiences under these conditions than after a hypnotic induction. That is, small differences in set and motivation can produce the same or greater changes as an induction does: It is therefore not clear that there is any effect of an induction that needs explaining. If that is true, there remains no motivation for the concept of trance, beyond the subjective sensations and the consequent clinical benefits resulting from clients' positive expectations of change.

Any suggestion that can be experienced after an induction can be experienced without the use of an induction. For example, Stroop interference can be reduced in highly responsive participants due to a hypnotic suggestion to see the words in a foreign language - but Stroop interference can also be reduced after the same suggestion without a hypnotic induction (Raz et al., 2006). Damaser et al. (1963) found that suggested emotions affected heart rate and galvanic skin potentials when the suggestions followed a hypnotic induction, but also when they did not. Although one study found that the experience of delusions (e.g. that the person in the mirror is not oneself) was much stronger after an induction than without (Connors et al., 2012), the same research group typically finds no difference in the strength of a suggested delusion with and without an induction.

In sum, the behavioural data do not require the notion of a trance or hypnotic state to explain them. Even if a theory of a special state were formed that predicted certain brain characteristics (as Jamieson is attempting with dissociated control and predictive processing theories, see later), the question of why that state is in no way needed to fully experience suggestions, would remain. The notion of a special state, therefore, needs more rigorous theorising and testing before we have a basis for claiming it exists (regardless of the historic assumptions that assume its existence). If no special state is needed to use phenomenological control, then phenomenological control may be used in any situation where the social context supports deceiving oneself into having a compelling subjective experience. We next explore some non-hypnotic situations where phenomenological control is used.

Phenomenological control in everyday life and in the psychologist's lab.

Hypnosis experiments are not the only places where people could use their phenomenological control. Take, for example, religious settings where a number of people have significant experiences as part of their worship: they may hear God talking to them; they may feel energy coursing through their bodies; and they may experience ecstasy. In some settings, it would be appropriate for some members of the groups to enter trances.

Out-of-body experiences, and automatic writing, can be suggested (e.g. Walsh et al., 2014), resulting in experiences which may be analogous, or even closely related, to similar experiences that have occurred in religious settings. Faith healing, as an example, if we are to assume that the healing comes from the settings, rituals, and social interactions rather than from divine intervention, could be explained by application of phenomenological control (indeed, the founder of Christian Science, Mary Baker Eddy, had been strongly influenced by mesmerism). Importantly, phenomenological control ability is empirically related to the extent to which people have had experiences of communicating with spirits, recalling past lives, or of leaving their bodies in everyday life.

While spiritual settings may have been historically the most common venues for people to use phenomenological control, the modern secular world still provides corresponding opportunities. The rubber hand illusion is a phenomenon where participants respond to interactions with a rubber hand as if it were their own hand; for example, inflicting injury on the rubber hand causes participants to feel vicarious pain. The classic method involves the participant's real hand and arm being obscured (typically hidden behind a piece of cloth), a rubber hand and arm being placed in view of the participant at a location and orientation that could mimic a realistic position for their hand and arm (with some obscuring to prevent the "chopped off" end of the arm from being visible), the real and rubber hands being stroked simultaneously, followed by the ownership of the rubber hand being tested.

Lush (2020) used a methodology recommended by Orne to discover demand characteristics: Namely, Lush described the rubber hand procedure to one set of participants without actually

subjecting them to it, and asked them what they expected to be found. People's expectations from the cues provided by the paradigm itself matched what real participants actually report when experiencing the rubber hand. The paradigm itself suggests what experiences are socially desirable to have.

Lush et al. (2020) tested the rubber hand illusion with a large sample of participants who had previously had their phenomenological control measured. Lush et al. found correlations between the phenomenological control scale and the indicators of the rubber hand illusion. Lows disagreed that the rubber hand felt their own in either the synchronous or asynchronous condition (though disagreeing more fervently in the latter); highs agreed that their rubber hand felt like their own (and more so in the synchronous than asynchronous condition). If the rubber hand illusion demonstrated by lows is the part of the rubber hand illusion that is not caused by phenomenological control (as lows have limited capacity for phenomenological control), then it is an illusion that the participants deny having. It seems that it is phenomenological control that creates the clear sense of owning the rubber hand – just as de Rochas had found in the 1800s. The stroking, and whether synchronously or asynchronously, was a non-verbal suggestion that participants responded to as best they could.

Mirror-sensory synaesthesia relates to phenomena where someone feels a sensation as a result of seeing someone else experience that sensation. An example could be feeling ticklish due to observing someone else being tickled with a feather. Lush et al. found that phenomenological control scale predicted the number of responses when observing touch to a human, and touch to an object, for mirror-touch synaesthesia; and both total pain and pain intensity on the vicarious pain questionnaire, indicating that mirror-sensory synaesthesia is at least partially generated through phenomenological control – again, finding that synaesthesia can be suggested replicates work from the 1800s.

There can be fashions for having particular experiences; one recent one is the internet boom in "ASMR" (Autonomous Sensory Meridian Response) videos where specific stroking actions often accompanied by whispers are meant to create pleasant tingling sensations in the scalp and down the

spine. Lush and colleagues found that the extent to which the videos produced the specified sensations was predicted by phenomenological control.

What is lost and what is gained?

When directed by hypnotic suggestion do people lose the will to resist? Are they compelled to obey the hypnotic suggestion? To some participants it subjectively seems like they are so compelled. But that subjective sense is itself part of the self-deception that phenomenological control can involve, a sense constructed by the participant themselves. For example, Coe et al. (1973) found that when highs were individually asked to meet the hypnotist by the library and then requested to help him do a drug deal, either as a direct request or a hypnotic suggestion, only about a third of the participants went through with the deal in either condition. Those who went through with it at least retrospectively said doing drugs fitted in with their values. To a first approximation, therefore, people cannot be compelled to do something with hypnotic suggestion that is against their values; in any case, no more compelled than they would have done anyway because of an authority figure requesting them. This sort of study could do with large scale replication (if ethics committees these days would approve it) to allow more precise estimation of the effect: Maybe in borderline cases, believing one cannot resist helps make it harder to resist.

Similarly, people are not compelled to follow post-hypnotic suggestions when they are not situationally appropriate. Spanos et al. (1987) showed that participants suggested to cough whenever they heard the word “experiment” over the following 48 hours, did so cough when tested in the experimental context, but did not cough when intercepted on campus by stooges who were not known by the participants to be part of the study. Participants constructed the experience of behaving involuntarily to a cue when that behaviour suited their goals (in this case, to be a good hypnotic subject). In summary, will power and executive control is not lost when phenomenological control is used – it just feels like it is. So, if will power and executive function is not lost, what is gained?

Historically, the urge to show there was a special hypnotic state was backed up by claims of the special powers it enabled. But hypnotic suggestions for extra strength or endurance produce no benefits that cannot be produced by motivating instructions. Further, age-regressing participants did not result in them responding to Piagetian or other tests in ways children at the regressed age actually behave, but rather how the participants believed children of that age would behave. The participants did not literally regress in age. Similarly, hypnotic attempts to improve memory, typically result in no more accurate recall than would have been achieved through repeatedly trying to remember, but rather greater confidence in confabulations and false memories (e.g. Nogrady et al., 1985), and a greater tendency to make memory mistakes based on leading and misleading questions. The use of hypnosis by police or clinicians to recover memories is not recommended.

From the 1800s to the present, one of the prime clinical uses of hypnosis has been pain reduction for headaches, labour during childbirth, burns, various dental and medical surgical procedures, or the pain associated with cancer. In a recent meta-analysis of all controlled studies using clinical pain, Milling et al. (2021) found substantial pain reduction for acute, procedural and chronic pain for hypnosis compared to treatment as usual. Hypnosis is indeed a useful addition to the clinical toolkit. That does not mean a special hypnotic power has been gained, however: Milling et al refer to other meta-analyses of clinical pain relief using mindfulness or CBT with similar effect sizes (albeit numerically smaller).

The 1970s and 1980s was a heyday of hypnosis research, and the effect of hypnosis on experimental pain was one of the key topics investigated. On the one side, those, like Spanos (1986) arguing that hypnosis did not involve any special process, argued that when pain suggestions were compared with or without an induction in different groups of participants, no significant differences in pain relief were found. On the other side, those like Hilgard, arguing for a distinct hypnotic process, argued that if more sensitive within-participants designs were used, highs show more pain relief from hypnotic rather than non-hypnotic suggestion. Spanos' replied that if highs know they are being tested in hypnotic and non-hypnotic contexts, they "hold back" in the non-hypnotic context

(i.e. they follow the obvious demand characteristics). When the non-hypnotic condition is given first and participants do not know a hypnotic condition will follow, there is no difference in pain relief between hypnotic and non-hypnotic conditions (for a review see Spanos, 1986). That is, Spanos claimed a special ability of hypnosis to reduce pain is only apparent, because any such difference as is observed arises from participants holding back in non-hypnosis conditions. While no consensus on these issues has been reached since that time, it is clear that pain can be relieved by non-hypnotic methods, such as CBT or mindfulness, and the key difference between hypnotic pain relief and CBT is the sense of whether or not the pain went away by itself (hypnosis) or because of deliberate strategies (CBT). The key feature of phenomenological control is constructing experiences without it seeming that oneself directly constructed them. One can reduce pain by reframing what is happening and becoming absorbed in imagination – a process that can be experienced as intentional mastery over the pain (in CBT) or as pain going away by itself or because of harnessing a power beyond one's conscious self (hypnosis).

We have previously referred to hypnosis reducing the Stroop effect, and how this can be achieved non-hypnotically. Indeed, it can be achieved by the participant feeling in control using imagination (Palfi et al., 2021), so phenomenological control is not being used – it is therefore active imagination that reduces the Stroop effect, and not a special hypnotic power.

In sum, when people use phenomenological control, what is gained is something purely metacognitive: The ability to construct relevant experiences according to situational needs but without realizing that it is oneself constructing them. It is a paradoxical trick one can play on oneself that can be useful spiritually (it can feel as if spiritual powers produced the experiences) and therapeutically (pain can go away by itself; one can have experiences without having to take responsibility for them). By the same token, the trick can suggest special powers are working through one (spiritual powers, or the power of the unconscious), when in fact there are no such powers. That can be a blessing in therapy (increasing expectations of change) and a curse (the process of self-deception is so effective that many false beliefs can unfortunately appear vindicated).

What determines individual differences in phenomenological control?

One of the striking facts about phenomenological control are the stable individual differences in it, with an estimated heritability of 64%. Phenomenological control is like a skill in that it can be trained (with for example, the Carleton Skills Training Package), and yet striking individual differences remain. In evolutionary terms, if phenomenological control was selected for as such, the stable state is reached when there is a range of abilities in the population. Why this should be is not clear and something for future modelling work to address.

It could be argued that like height, nose size or maybe imagery vividness, there may be no special explanation for why there are individual differences, such differences simply exist. However, it is startling that some people do not experience phenomenological control at all, and others can create extraordinary distortions in subjective experience. Any handle we can obtain on why is worth striving for. Some insight might be gained by knowing the correlates of phenomenological control. The best predictor is the expectancy of how well one believes one will respond (Braffman & Kirsch, 1999), and if expectancy is modified, then phenomenological control is modified accordingly (in some studies anyway, e.g. Kirsch et al., 1999). We will see what purchase this gives us on theories of phenomenological control below.

Other correlates need to be tested in a separate context from that of testing phenomenological control. Council and Kirsch showed that the correlation of hypnotisability with for example absorption, found when they are tested in the same session, is reduced to close to zero when tested in apparently unrelated sessions. When a correlate is tested in the same context, the participant inferring a relationship between them is to be expected by the researcher, and participants may, for example, interpret the questions in a questionnaire as applying specifically to experiences of phenomenological control, thereby creating a correlation when there would not have been one otherwise.

The correlation between hypnotisability and fantasy proneness survives being tested out of context. The trait that motivated the absorption questionnaire, namely a tendency to become

immersed in imagination, is relevant to phenomenological control, it is just the absorption questionnaire itself does not measure it adequately. Imagination is the process of entertaining a possible or counterfactual world. In constructing such a world, there may or may not be accompanying vivid imagery, yet this is assumed by the absorption questionnaire. In fact, the vividness of the imagery is barely related to phenomenological control; even aphantasics have just about normal levels of phenomenological control (Cabbai et al., 2024). Phenomenological control involves constructing imaginary situations (with or without vivid imagery). But it is not just imagination, nor acting nor pretence: It involves a felt sense of reality. How is this possible?

Theories of Phenomenological Control

One of the earliest theories of hypnotic response was the monoideism of James Braid in 1842: One idea only, say that of a rising arm, is in consciousness, and because it is uncontradicted by any thought of anything else, it alone controls behaviour and its reality is uncontested. This theory of hypnosis was adopted more recently by authors of global workspace models of consciousness (e.g. Baars in his 1997 book). This is a rare case in psychology where an intuitive theory has been falsified by a single finding: In studies in the 1970s and 1980s, Zamansky showed that highs and mediums could imagine a suggestion failing, report their imagination thereby ensuring that the concepts of the suggestion failing were in their minds, but still simultaneously pass the hypnotic suggestions. Phenomenological control does not depend on the mind being absorbed in just one idea.

The sociocognitive theories of hypnosis were developed in the 1970s and 1980s by Barber, Spanos, Sarbin and Coe amongst others. They drew on key ideas in social psychology, namely that social context affects us more than we typically believe it will, so we attribute the effect to something else. Hypnosis is a social influence situation in which we attribute our actions to hypnosis – not the social demands per se nor even ourselves (Spanos, 1986). If we are told the arm will rise by itself, we may lift the arm due to the social demands and attribute the lifting to hypnosis (not being aware that

social demands are a powerful cause). Cognitive strategies may also be needed to help comply with the demands. Barber and Spanos proposed that imagining along with the suggestions, and imagining supportive goal-directed fantasies (GDFs), when combined with suitable motivation and expectation, was sufficient to make resultant behaviours feel automatic and involuntary. Goal-directed fantasies, for example imagining that the hands are magnets being attracted together, or that the hands are held together by strong glue, feature in most suggestions and have been part of the hypnotic language at least back to the time of Hull. Note that GDFs cause feelings of automaticity and involuntariness in a hypnotic context, but not in any other context. They are, therefore, not sufficient for phenomenological control to happen. Social demands and expectations are also needed, but the work of Zamansky just discussed shows that GDFs may be irrelevant: One can be absorbed not in a GDF but in contradictory imagery, and still respond with phenomenological control.

Further evidence against a simple GDF-based theory is the ideomotor effect, which causes small imperceptible movements as a result of directed imagination. While it is possible for the hands to be imagined as being magnetic and coming together through the ideomotor effect, this would typically appear as slow overall progress with many jerky movements throughout, taking perhaps 30 seconds or more for the hands to finally touch. Compare this to the typical suggestion response from a highly responsive participant, where the hands can move together in one smooth movement, taking less than five seconds to do so. Whereas the former reflects the small movements of the ideomotor effect, the latter certainly does not appear to.

The socio-cognitive approach tries to explain hypnotic response in terms of everyday psychological processes established by social psychology; the emphasis had been on “explaining away” hypnosis in terms of already known processes. In fact, Spanos and Barber seemed to be most amused when poking fun at those who had been taken in at one or other of the self-deceptions that phenomenological control caused (special abilities, special causal trance states). And while most of what they said was extremely valuable and true, the very thing of interest, phenomenological control, whose existence they did not deny when pushed, generally seemed to be just out of focus.

The existence of phenomenological control, and its striking individual differences, is something to be addressed head on.

Kirsch (1999) extracted one component of the sociocognitive approach (the role of expectancies) to formulate a simple theory, which was also powerful in uniting different phenomena, namely placebo and hypnosis, with the aim to explain rather than explain away. He proposed that response to suggestion and placebo effects are both due to the direct causal power of expectancy, unmediated by any other psychological variable. A placebo analgesic works because pills presented as pain relieving medication generate the expectancy that pain will go away. The expectancy for pain relief is the direct unmediated cause of pain relief. In the same manner, response expectancy theory states that we have expectations of how hypnosis proceeds and these might translate to expectancies for how we will respond, for example, for the arm to rise by itself. The expectancy causes, in an unmediated, way the arm to rise by itself. In short, simply expecting to respond positively to a hypnotist's suggestions may subsequently result in automatic behaviour in response to those suggestions. This theory explains why expectancy to respond to a specific suggestion is the best predictor of the suggestion being experienced.

Lynn et al. (2023) mapped expectancies to respond, which they called response sets, to the predictive processing framework now popular in cognitive neuroscience by suggesting that perception and action, including in response to suggestions, are based on top-down "prediction"s. The expectancy to perceive or respond in a certain way is reworded by Lynn et al. as a top-down "prediction with a weighting equivalent to the strength of the expectation. Lynn et al. argue that suggestions with highly weighted prior predictions, that is, ones for which there is a high expectancy of responding, are thus not updated by contradictory bottom-up sensory evidence, are likely to be responded to.

A problem for the response expectancy theory is that people can (when not in a context calling for phenomenological control) rate themselves as 100% certain that something will occur, for example that the next sheet of paper will be blank, but that does not stop them from seeing

something that is in fact written on the paper. Expectancies can bias perception in poor viewing conditions. But phenomenological control can create perceptions in clear view with sustained contrary evidence.

Dissociation theories attempt to tackle phenomenological control as a central problem by postulating special mechanisms. These theories can be tracked back to Janet and the Salpêtriére School in Paris from around the start of the twentieth century. Believing hypnosis to be a symptom of hysteria, Janet claimed that hypnosis caused dissociation, permitting personality, thoughts and memories to be separated from awareness. Hilgard (1977) reformulated the concept, under the guise of neodissociation, as a normal non-pathological capacity. Hilgard's version specifically described separate streams of consciousness, separated by amnesic barriers, such that a dissociated stream constitutes a "hidden observer" always aware of what is going on. If this were true, it is not clear that hypnotic analgesia for procedural pain would be ethical because it implies the existence of a stream of awareness that is in agony. Fortunately, the hidden observer can be elicited in only about 5% of participants, so dual streams of consciousness cannot be the primary means of producing phenomenological control. The hidden observer appears to be another experience that some people can construct by phenomenological control to meet hypnotic requirements.

To deal with this problem, Woody and Bowers (1994; see also Woody & Sadler, 2008) devised dissociated control theory, which proposed that the executive control functions can be dissociated, allowing a single stream of consciousness. According to Woody and Sadler the hypnotic state is one in which executive monitoring functions are impaired such that the executive system can still exert control, but it cannot monitor and in real-time adjust how well the control is being implemented. One problem is that it is not clear this accounts for the phenomenology of phenomenological control. A general impairment in executive monitoring is not consistent with engaging with the world in an entirely normal way except for one specific behaviour, for example the hands feeling like magnets. Nonetheless, the notion that executive monitoring fails in some way is consistent with people being unaware of creating certain mental states and behaviours.

Jamieson (2025) postulates a dissociation in control the other way round: Executive intentions are not formed in the frontal cortex, but movement is instead controlled by posterior body self-motor images; the executive monitoring of this state of affairs accurately recognises this is not a normal intentional action. On the face of it, this proposal amounts to imagining the body movement (activation of posterior body areas). Zamansky's results, showing imagining the opposite of what is suggested does not interfere with phenomenological control, are potentially problematic for such a theory.

In summary, sociocognitive theories did not take phenomenological control seriously as a unique powerful phenomenon in its own right; dissociation theories did, but often tried to explain it by assuming states constructed by phenomenological control (trance, hidden observers) as fundamental. In fact, the whole history of investigating phenomenological control, from Mesmer onwards, is one of taking specific accidental creations of phenomenological control as its essence, or, by overcompensating in the other direction, a rejection of anything much interesting happening at all ("just" imagination, or social demands, etc.).

Despite being the protagonists of opposing camps, Spanos and Hilgard, when they gained actual explanatory purchase on phenomenological control, they did so in the same way: They both said the participant intended, by the executive system, the required motor or cognitive action, but they were unaware of this intention (because of an "amnesic barrier" for Hilgard, or "misattribution" for Spanos). Dienes and Perner (2007) distilled this insight from both and said: Let that be the theory in itself. They called this the cold control theory. Phenomenological control is explained in about as simple a way as possible, given the facts to be explained: Because the executive system controls functioning, it can create the behaviours or imagined scenarios that are relevant to satisfy the person's goals, flexibly adapting to the demands of each scenario (possession, magnetic fluids, etc); because the person is not aware of the relevant intentions, it does not feel like they are doing it themselves. By intending to move and being unaware of the intention, the movement seems involuntary; by intending to imagine, but being unaware of that intention, the imagination seems

perceptual; by intending to pretend but being unaware of that intention, the pretence feels like belief.

On response expectancy theory, as a reviewer pointed out, phenomenological control could be considered another heuristic that simplifies the world around us and reflects a likely consequence of cognitive miserliness (not engaging rational thinking because it takes too much effort). Balancing prior probabilities of predictions against evidence is simply how we perceive the world. But intending to imagine is different process than perceiving; intending to imagine to fulfil social goals is no longer a matter of cognitive miserliness but the opposite: It is creating a cognitive richness (the imagined counterfactual world). Still, the response set theory of Lynn and Kirsch and cold control can be related in the following way. A response set is a readiness to respond; both theories postulate that hypnotic response is produced by the right response set. If the readiness is an expectation, the resulting theory is response expectancy theory; if the readiness is an intention, the theory is consistent with cold control. Expectancies and intentions are different mental states so the theories are different; expectancies are satisfied by taking the world as it is and making the mental state fit; intentions are satisfied by taking the mental state as it is and making the world fit – in the case of phenomenological control, in order to fulfil social goals, not the goals of accurate perception

There remains the problem of how someone could intend to say lift an arm, and think they are not intending to lift their arm. Solving this problem requires a theory of how awareness of intentions is normally generated. Martin and Pacherie (2019) draw on the predictive processing framework's account of voluntary action: According to predictive processing, a voluntary action consists of forming a prediction of the proprioception that should be perceived if the action were carried out; simultaneously, actual proprioceptive feedback is reduced (producing sensory attenuation) so that the evidence of how the world actually is does not override or correct what the prediction says the world should be like. The brain resolves the difference between the prediction and the evidence by doing what it can to change the evidence: That is, the arm rises. The hallmark of voluntary action is thus sensory attenuation. That is, one becomes aware of the intention to move

by being aware of sensory attenuation, that is, that there is diminished sensory evidence coming from the muscles and other tissue engaged with the movement.

Martin and Pacherie propose that with a motor hypnotic suggestion, one attends to the proprioception from, say, the arm. This reduces some of the sensory attenuation. Too much reduction of sensory attenuation and the whole mechanism for moving breaks down; too little and the movement feels like an ordinary voluntary movement. The participant seeks to find a balance, undoing the sensory attenuation just enough that the arm rises – but feels like it is involuntary. This is a novel proposal, and it will be interesting to see where this theory goes. A testable assumption of the theory is that people are aware of sensory attenuation under normal conditions.

Jamieson (2025) reviews other predictive processing theories, including his own. He postulates that hypnosis is a state where focus on body sensations reduces interoceptive predictive error to a minimal level in the insula. Small interoceptive error is presumed to correspond to a felt sense of presence and reality – and hence to the reality of hypnotic suggestions. Jamieson suggests various tests of the theory. One issue to clarify is how to ensure that the experiences generated fit the goals of the participant so the full range of phenomenological control can be explained, not just in the hypnotic context, but also in cases where no induction is used.

Cold control is essentially a trick a person plays on themselves to deceive themselves. In fact, cold control theory says that phenomenological control differs from normal action only in this meta-cognitive trick: No other abilities are gained or lost. Why would a person wish to deceive themselves? Why should such a capacity evolve – the capacity to misrepresent reality according to goals? Surely perception should be as accurate as possible? Dienes and Perner (2007) suggest that cold control evolved so that people could have the spiritual experiences that would confirm the beliefs of one's group, and give one the status that comes from contact with the spirit world. The best way to deceive others is to deceive oneself. The fact that the person intends each state that they experience, means that the experiences they have can fit their goals; if it becomes apparent that the experiences would not fit in with one's values, those experiences will not be constructed. Did a

special frontal control mechanism evolve to produce phenomenological control, specifically to target particular intentions with inaccurate thoughts that they do not exist? Or rather is phenomenological control just piggybacking on the normal action of expectancies biasing one's thinking, specifically one's thinking about intending? We still have much to learn! The startling individual differences prima facie suggest a special mechanism.

If anything can go wrong with a complex psychological mechanism, it will in someone. People's goals and desires are not necessarily consistent. They may at the same time want to forget a part of their life; and yet also wish to remember it. This can generate fugue states, like amnesia. Charcot and Janet were misled into thinking all phenomenological control was maladaptive. In fact, it is entirely normal and part of many people's experiences in everyday life.

Phenomenological control evolved as self-deception. It is so good at its function that the history of research into subjective experience is a history of researchers deceiving themselves and being deceived by honest people: So compelling are the experiences of energy flows, trance states, artificial arms becoming one's own, memories of non-existent events, on and on, that phenomenological control constantly reinvents itself according to the beliefs of each social situation in which it finds itself. Gradually researchers have stripped away artefact from essence. If anyone asks what has psychology ever done for us? We can say, from 1784 onwards, it has discovered phenomenological control and the role it does and can play in our lives: It has tricked us in many ways, but if we master it, it can help us.

Future Research Directions

A fruitful area of research has been investigating what experiences in certain situations, such as ASMR, can be predicted by phenomenological control. What every day and laboratory experiences are due to people responding to social or situational cues to generate compelling experiences that would help them fulfil their goals? One large area to be investigated would be the wealth of spiritual effects that people may experience as part of religious rituals. As another example, is phenomenological control one of possibly many mechanisms for generating a placebo effect?

Why are there individual differences in phenomenological control? Despite extensive research, we do not know the answer to this question. Individual differences are inherited and the trait appears to have evolved to be variable across the population. What are the essential modelling assumptions that would shed light on this?

Pursuing the theoretical perspectives that underpin phenomenological control, it should be possible to identify the postulated key characteristics that cause the experienced self-deception, and devise means to modify them. A number of trainings in hypnotic response have been developed over the last half-century that target different aspects of the competing theories. Response expectancy theory motivates directly targeting expectations which has sometimes produced striking results (Kirsch et al., 1999). Similarly, it should theoretically be possible to directly manipulate awareness of intention, if cold control theory is true. Would people trained to increase their phenomenological control show, in an unrelated context, more spiritual experiences, a greater rubber hand illusion, or other experiences that may arise from phenomenological control?

What can imagination do by itself without phenomenological control? For example, what clinically relevant effects of hypnosis, such as altering blood flow, are caused by imagination per se without the need for phenomenological control?

What are the ways phenomenological control may go wrong? How well could it account for mass psychogenic illness or other socially contagious experiences (such as believing one has an animal spirit)? Conversely, how can we harness it to give us more happiness, by giving us experiences we enjoy?

Almost one hundred years after Hull first published his book discussing statistical studies of response to hypnosis and suggestion, we certainly appear closer to answering the fundamental questions of how we deceive ourselves into believing that our perceptions and behaviour are happening to us rather than under our control, but there is clearly significant distance still to travel.

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